United States Department of the Interior
Bureau of Land Management

Environmental Assessment
DOI-BLM-CO-N050-2017-0097

Halandras Water Projects

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U.S. Department of the Interior
Bureau of Land Management
Northwest District
White River Field Office
220 East Market St
Meeker, CO 81641

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Identifying Information

Project Title: Halandras Water Projects (Projects 1 – 3)

Applicant: Halandras Living Family Trust

NEPA Document Number: DOI-BLM-CO-N050-2017-0097-EA

Permit Authorization Number: 0504008

Location: The Davis Creek Allotment (#06016) is comprised of 4,738 acres of Bureau of Land Management (BLM) administered lands and approximately 1,193 acres of private lands located in Rio Blanco County. The allotment is located approximately 12 miles south of Meeker (refer to Appendix A for maps).

1.2. Background

In 2002, seven pastures were delineated within the allotment and the BLM approved a conversion from sheep to cattle grazing (CO-WRFO-02-83-EA). In 2012, the allotment was approved for grazing by either cattle, sheep, or a combination of sheep and cattle (DOI-BLM-CO-110-2012-0049-DNA).

1.3. Purpose and Need for Action

The purpose of the action is to develop new livestock water facilities in the allotment to enhance distribution of livestock on the allotment and to continue the progressing towards or meeting the Colorado Public Land Health Standards, the Fundamentals of Rangeland Health (43 CFR 4180), and resource objectives in the White River Resource Management Plan (RMP).

The need for the action is to respond to a proposal put forth by the Halandras Family Living Trust with assistance from the Natural Resource Conservation Service (NRCS) for new water projects that span several of the pastures and help provide reliable water sources within the allotment and to improve livestock distribution.

1.4. Decision to be Made

Based on the analysis contained in this EA, the BLM will decide whether to issue approval for the proposed Halandras Water Projects 1-3, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA), the BLM must determine if there are any significant environmental impacts associated with the Proposed Action warranting further analysis in an Environmental Impact Statement (EIS). The Field Manager is the responsible officer who will decide one of the following:

- To approve the proposed water facilities as submitted;
- To approve a modified water facilities proposal;
- To analyze the effects of the proposed water facilities in an EIS; or
- To deny the proposed water facilities projects located in the Davis Creek Grazing Allotment.

1.5. Conformance with the Land Use Plan

The Proposed Action is subject to and is in conformance (43 CFR 1610.5) with the following land use plan:

Land Use Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP)

Date Approved: July 1997

Decision Language: "Maintain or enhance a healthy rangeland vegetative composition and species diversity, capable of supplying forage at a sustained yield to meet the demand for livestock grazing." (page 2-22)

"Rangeland improvements would be identified in activity plans. Range improvements are necessary to control livestock use and improve rangeland condition." (page 2-25)

1.6. Management Category

Per the RMP, all allotments in the WRFO are placed in one of three management categories (improve, custodial, or maintain) that define the intensity of management. Allotments in the improve category are those where funding for range improvements or on-the-ground management efforts are most needed to improve the resources or to resolve serious resource conflicts. The Davis Creek Allotment is in the improve management category.

2. PUBLIC INVOLVEMENT

The BLM uses a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to identify issues, concerns, and potential impacts that require detailed analysis. Scoping is both an internal and external process.

Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on 8/15/2017. The BLM notified interested parties (including Rio Blanco County, Colorado Department of Agriculture, and Wildlands Defense) about the project on 10/26/2017. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 11/13/2017.

3. PROPOSED ACTION AND ALTERNATIVES

3.1. Alternative A – Proposed Water Facilities (Projects 1 – 3)

The Halandras Family Living Trust, in cooperation with the Natural Resource Conservation Service, has proposed three water development projects within the allotment which involves placement of watering facilities in five of the seven pastures (refer to Appendix A, Map 1). The beginning of construction for any of the proposed projects is as soon as allowable in 2018 and subsequent years but outside of migratory bird nesting period (May 14 until July 15). The order of construction may change depending on precipitation conditions in the area, various other circumstances, and contractor availability, etc. The applicant does not plan on constructing all of the projects in one year but rather as a phased approach depending on funding. The applicant hopes that at least one project would be completed annually.

The three water development projects all involve using water wells on private property and installing pipelines to transport that water to either new stock tanks on private or public land or existing stock ponds/catchments on private and/or public land. For Projects 1 and 2, the water wells on private property were installed in the last few years and have associated stock tanks. For Project 3, the water well and associated stock tank on private property is planned to be drilled in 2018.

3.1.1. Proposed Water Development Projects

Project 1

Project 1 is located entirely within the Davis Gulch Pasture (Map 2). The water well was drilled in 2016 and is located at Point 1A with an associated stock tank on private land. From the well, the water would be pumped north in the water pipeline (approximately 5,300 feet) to a stock tank and buried 20,000 gallon water storage tank located at Point 1B which is on the boundary of public and private land but would be located on the private lands. From the storage tank (Point 1B) water would be gravity feed to a stock tank located at Point 1C on public land at a distance of approximately 6,125 feet and then to a stock tank located at Point 1D on private land via a water pipeline at a total distance of approximately 3,050 feet of which 2,050 feet is on public land.

Project 2

Project 2 is located within portions of Deer Gulch, Piceance, and Coyote Pastures (Appendix A, Map 3). The well at Point 2A was drilled in 2015 on private land and has an associated stock tank. From the well, there are two proposed water pipeline routes to transport water south.

- Option 1: From the well at Point 2A, the water would be pumped in the water pipeline northeast to the ridgeline where it makes a bend to the south to continue to travel to Point 2B for approximately a total distance of 4,900 feet of which 2,600 feet of the water pipeline is located on public land. At Point 2B a stock tank would be installed on public land. The water pipeline would continue to another proposed stock tank location at Point 2G also located on public land at a total distance of approximately 2,550 feet.

- Option 2: From the well at Point 2A, the water would be pumped south in the water pipeline along the drainage (locally called Chokecherry Draw) for approximately 4,350 feet to the proposed stock tank located at Point 2G.

The applicant requests the flexibility to build either one or both options of the proposed water pipeline routes from Point 2A to 2G.

From Point 2G, there would be water pipeline for approximately 3,150 feet to reach a split in the water pipeline. The proposed water pipeline would continue from this split for approximately 6,100 feet to the proposed stock tank located at Point 2D to the northwest. From the split in the water pipeline for approximately 300 feet to the proposed stock tank at Point 2E. From Point 2E for approximately 3,500 feet to the proposed stock tank located at Point 2F.

Project 3

Project 3 is located entirely within the Hanahan Pasture (refer to Appendix A, Map 4). The proposed water well would be drilled in 2018 at Point 3A with an associated stock tank located on private land. From the well, the water would be pumped through the water pipeline north for 2,100 feet to a stock tank located at Point 3B also located on private land. From Point 3B, water would be gravity fed through the water pipeline for approximately 3,890 feet to a stock located at Point 3C of which 2,845 feet would be on public land. From Points 3C the water pipeline would travel south for approximately 4,800 feet to a stock tank located at Point 3D which would all be located on public land.

3.1.2. Design Features

1. All stock tanks are round tires with an 11 feet diameter and would require 8 inches of excavation (at most). All of the stock tanks would be float system regulated and would include wildlife escape ramps. All stock tanks would be located in relatively flat terrain between 50-100 feet from the two-track, except at Point 3D (Project 3) where the stock tank would be approximately 200 feet from the two-track.

2. All pipe to be used for water pipelines is proposed as 2 inch HDPE (high-density polyethylene pipe). All water pipelines would be ripped no shallower than 18 inches in depth and would be ripped in the two-track route except where they divert to provide water to the stock tanks or stock ponds/catchments which would require approximately 50 to 100 feet of water pipeline outside of the two-track road bed.

3. All rises and dips along the water pipelines that cannot be graded out during installation would have an airvac or drain installed as needed. Airvacs would be installed on the side of the road in the safest location possible to prevent damage to the airvac. Drains would be day lighted as necessary (surface elevation outlet). Day lighted drains would be covered to avoid animal intrusion (e.g., slotted cap).

4. Existing catchments located along the two-track route may be filled by the water pipeline. The water pipeline system design would be equipped with valves that would allow the permittee the discretion to choose to fill these catchments or not.

5. All of spur water pipeline routes to stock tanks would be equipped with valves to allow the permittee the ability to choose which stock tanks to fill or which to leave empty. Within a particular project, the permittee may choose to fill all of the tanks, only one of the tanks, or none of the tanks at any given time. The design of the system does not require filling those stock tanks closer to the water source (well) in order to be able to fill the most distant tanks.

6. Project work including pipeline and stock tank installation will take place outside of the migratory bird nesting period of May 15 – July 15. Work will be permitted from July 16 – May 14.

3.1.3. Applicable Terms and Conditions from the Grazing Permit

7. In order to improve livestock distribution on the public lands, no salt blocks and/or mineral supplements will be placed within ¼ mile of any riparian area, wet meadow, or watering facility (either permanent or temporary) unless stipulated through a written agreement or decision (43 CFR 4130.3-2(c)).

8. All new water sources on public lands require prior BLM approval and NEPA analysis due to the potential to change livestock distribution and to create concentration areas.

9. The permittee/lessee is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.

10. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the authorized officer (AO). The permittee/lessee will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The permittee/lessee, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.

11. Pursuant to 43 CFR 10.4(g), the permittee/lessee must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and

(d), the operator/holder/applicant must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

12. The permittee/lessee is responsible for informing all persons who are associated with allotment operations that they will be subject to prosecution for disturbing or collecting vertebrate or other scientifically-important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands. If any paleontological resources are discovered as a result of operations under this authorization, the permittee/lessee must immediately contact the appropriate BLM representative.

13. Prior to maintaining range improvement projects the permittee must notify the BLM of their intent so the BLM can verify or complete adequate cultural surveys.

14. If paleontological materials (fossils) are discovered during construction activities, the operator is to immediately stop activities that might further disturb such materials, and contact the AO. The operator and the AO will consult and determine the best option for avoiding or mitigating paleontological site damage.

3.2. Alternative B – No Action

The proposed water projects would not be approved and no construction would take place on public land. The water wells and stock tanks located on private land would continue to be used and/or constructed where applicable. There would be no changes in the current livestock grazing authorization. Livestock would be limited to the reliable water resources currently available within the allotment for use. Current livestock distribution in the pastures within the Davis Creek Allotment would remain unchanged.

3.3. Alternatives Considered but Eliminated from Detailed Analysis

The BLM considered maintaining existing catchments rather than evaluating the development of new water sources. This alternative was eliminated from detailed analysis because the catchments rely on snow and/or rain events to fill them and as such do not provide reliable water sources every year. Also, most of the existing water catchments are located in or near drainage bottoms which does not help with improving livestock distribution across the allotment.

3.4. Issues

The CEQ Regulations state that NEPA documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a

significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 1 lists the resources considered and the determination as to whether they require additional analysis.

Table 1. Resources and Determination of Need for Further Analysis

Determination[1]	Resource	Rationale for Determination
Physical Resources		
NI	Air Quality	The equipment that would be used for construction of the water projects would result in emissions of engine exhaust and local, short-term (a few days at each location) dust production. No quantifiable change in air quality would occur with the Proposed Action.
NI	Climate Change	Addressing effects on greenhouse gas (GHG) levels is difficult due to the lack of explicit regulatory guidance on how to meaningfully apply existing NEPA regulations to this evolving issue and due to the continuously evolving science available at varying levels. The proposed action and alternatives, when implemented, would not have a clear, measurable cause-and-effect relationship to climate change because the available science cannot identify a specific source of greenhouse gas emissions and tie it to a specific amount or type of changes in climate. Therefore, the proposed action to the global climate will not be analyzed in detail in this EA.
NI	Geology and Minerals	The Proposed Action is not located in areas identified in the White River ROD/RMP as available for coal, sodium or oil shale leasing. It is not encumbered by mining claims or oil and gas leases. And it is not located in the area identified by the White River ROD/RMP Oil and Gas Amendment as having a high potential for oil and gas development. The nearest producing oil and gas well is approximately 1.3 miles northwest of the closest proposed range improvement project. Construction of the water lines, storage tank or placement of water troughs would have little to no impacts on the geologic mineral resources within the analysis area.
NI	Soil Resources*	Based on 2012 NRCS soil survey data, no fragile or landslide classified soils are impacted by Alternative A. Alternative A is located within the McCarthy Gulch-Piceance Creek and Headwaters of Piceance Creek watersheds (HUC12). Within these watersheds, 44 percent of the soils are classified as having a severe erosion hazard. To account for impacts from construction equipment and livestock impacts, a 25ft buffer was used to evaluate pipeline impacts and a 265ft buffer (0.1mile - see Table 2, Footnote 2) for stock tank impacts. Based on analysis using these buffers, only 0.3 percent of the total acreage located within the watersheds or, 0.7 percent of severe erosion rated soils located within the watersheds potentially would be impacted by Alternative A. Based on the minimal acreage impacted and the fact that the majority of the disturbance will occur on existing two-tracks; no further analysis was deemed warranted and no additional impacts to Land Health Standard 1 beyond current levels would be expected from the installation of the proposed RIPs.
NI	Surface and Ground Water Quality*	Refer to the Riparian Areas and Aquatic Wildlife discussion below.

Determination[1]	Resource	Rationale for Determination
Biological Resources		
NI/NP	Riparian Areas and Aquatic Wildlife*	There are no aquatic systems within the allotment that support fisheries or other higher order aquatic vertebrates. Both Davis Gulch and Deer Gulch were assessed to determine stream condition in 2012. None were found to support riparian communities due largely to insufficient water flow. At that time, there was no recent evidence of livestock use and livestock grazing was not thought to be influencing the channel. The proposed water project would not be expected to negatively influence either system. Option 2 of Project 2 would be expected to result in an increase of livestock use in the Deer Gulch system as it would provide consistent water sources in the narrow valley bottoms which would be expected to retain and concentrate livestock use.
PI	Vegetation*	Construction activities would temporarily remove than 0.1 acre of vegetation for the placement of each trough. The installation of the water pipelines would be within the existing two track routes except where short spurs are needed to extend from the two track to existing catchments or stock tanks adjacent to the roads. Approximately 10 acres around the trough locations would be subjected to the heaviest use by livestock grazing, trailing to and from the water troughs, and the potential for resting areas after drinking by livestock.
NI	Invasive, Non-native Species	Isolated occurrences of invasive, non-native or noxious weeds such as musk thistle, bull thistle, and houndstongue occur within the allotment. Minor, small spot infestations of cheatgrass occur but are primarily found at the lower elevations. Implementation of the Proposed Action should have minimal effect on the presence or spread of such species. The permittee has and will continue to conduct treatment efforts into the future to reduce the presence of any infestations and/or spread of invasive, non-native weed species onto the public lands where applicable. Continuation of current authorized use along with the Proposed Action is not expected to result in expansion of invasive, non-native or noxious weeds. Treatment will be relatively easy to accomplish for the locations of the Proposed Action because of two-track route access adjacent to all proposed locations by equipment.
NI	Special Status Animal Species*	There are no threatened or endangered animal species that would be directly or indirectly impacted by the Proposed Action. BLM sensitive species that are known to occur in the project and may be influenced by the Proposed Action are limited to Brewer's sparrow. Impacts to this species would be integral with the discussion in Migratory Birds. Given that the proposed action would result in the depletion of nine acre-feet of water from within the Colorado River basin, this project falls under BLM Colorado's Programmatic Biological Assessment (PBA) for water depleting activities (excluding fluid minerals development) on BLM lands in the Colorado River basin in Colorado (BLM 2008). In response to BLM's PBA, the U. S. Fish and Wildlife Service (FWS) issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-08-F-0010) on February 25, 2009, which concurred with BLM's determination that water depletions are "Likely to Adversely Affect"

Determination[1]	Resource	Rationale for Determination
		the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. Likewise, the project is also likely to adversely affect designated critical habitats for these endangered fish along the Green, Yampa, White, Colorado, and Gunnison rivers. However, the FWS also determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat. A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and aid in recovery efforts for these endangered fishes resulting from water depletions from the Colorado River Basin. The PBO addresses internal and external BLM projects including impoundments, diversions, water wells, pipelines, and spring developments. The FWS determined that projects that fit under the umbrella of the PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Upper Colorado River Basin if they deplete relatively small amounts of water (less than 100 AF) and BLM makes a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by each project. The PBO instructed BLM to make an annual payment to the National Fish and Wildlife Foundation (NFWF) to cover all BLM authorized actions that result in water depletions. The Water Projects will deplete nine AF annually. The depletion fee for this project is $190.53 ($21.17 x nine AF). This project has been entered into the White River Field Office water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year. The CSO is responsible for paying depletion fees based on the annual statewide total.
PI	Raptors and Migratory Birds	See discussion below in Section 4.5.
NI	Terrestrial Wildlife*	The project area largely serves as big game general winter range although a small number of elk would be expected to occupy a portion of the allotment throughout the summer months as there is available, albeit limited, water (Deer and Davis Gulches) and appropriate cover (spruce/fir/aspen intermixed with mountain shrub).While there is likely some level of competition for forage resources, there is no obvious indication of existing big game and livestock forage conflicts, as most big game use is not coincident with livestock use. Development of these water source would be expected to redistribute livestock across the allotment and alleviate heavy grazing pressure at existing water sources. Reductions in herbaceous ground cover would be expected at these new water sources, however, there is no evidence that the current grazing system is incompatible with big game use. Development of these water sources is not expected to negatively influence big game.

Determination[1]	Resource	Rationale for Determination
		Impacts to nongame species (e.g., small mammals) would be similar to those discussed in the Migratory Bird section.
NP	Wild Horses	The Davis Creek Allotment is not located within the Piceance-East Douglas Herd Management Area or either of the Herd Areas (North Piceance or West Douglas) so there would be no impact to wild horses.
Heritage Resources and the Human Environment		
NI	Cultural Resources	A pre-field file search was conducted through the COMPASS website of the Colorado Office of Archeology and Historic Preservation and cultural resource files stored at the WRFO. The results of the file search indicated that previous cultural resource inventories sufficiently covered portions of the project area. A Class III (100 percent pedestrian) level inventory was conducted for the remainder of the project area. The inventory work was completed by the BLM WRFO archaeologist and the NRCS archaeologist on October 19-20, 2017, and did not identify any eligible cultural resources within 50 feet of the proposed pipeline corridor related facilities. As a result, the proposed project will not have any anticipated direct or indirect impacts to known cultural resources.
NI	Paleontological Resources	Paleontological materials (fossils) are not considered to be endangered by normal grazing activities. Direct impacts to fossil materials may occur in areas of livestock concentration and can include damage or destruction of fossils and overall disturbance of the stratigraphic context in which they are located. Because in situ fossils are seldom encountered in alluvial areas where cattle tend to concentrate, the potential for damage to undisturbed fossil remains low. No range construction projects that have the potential to create disturbance would be permitted without paleontological clearance in advance. All animal supplements such as salt blocks, water tanks and feed should be placed away from outcrop formations.
NI	Native American Religious Concerns	Cultural resources are locations of past or current human activity, occupation, or use and include prehistoric or historic archaeological sites, buildings, structures, objects, districts, or other places. Cultural resources can also be natural features including native plants localities that are considered important to a culture, subculture, or community often referred to as Traditional Cultural Properties (TCPs). TCPs, located throughout the WRFO area, are places associated with the traditional lifeways, cultural practices or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity. Locations of TCPs are often not known to the BLM, but may be present in or near the allotments in the Proposed Action. Should recommended inventories or future consultations with Tribal authorities reveal the existence of such sensitive properties, appropriate mitigation and/or protection measures may be undertaken.
NI	Visual Resources	The area where the Proposed Action is located is within a Class II Visual Resource Inventory (VRI) area and has a Class II Visual Resource Management (VRM) Objective. Because the stock tanks would not be noticeable from any Key Observation Points along State Highway 13 or County Road 5, and there is no public motorized access within the project area, the tanks are not expected to attract the

Determination[1]	Resource	Rationale for Determination
		attention of casual observers. The Proposed Action would not change or affect the VRI Class II rating and would meet the VRM Class II objective of retaining the existing character of the landscape.
NI	Hazardous or Solid Wastes	There are no known hazardous wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.
NI	Fire Management	The manipulation of vegetation from the proposed project is minimal. The Proposed Action would not result in substantial changes to fire management in the allotment area.
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to the most recent Census Bureau statistics (2010), there are no minority or low income populations within the WRFO.
NP	Lands with Wilderness Characteristics	The Proposed Action includes no acreage of the allotment that overlaps with lands identified as having wilderness characteristics.
Resource Uses		
NI	Forestry and Woodland Products	The Proposed Action would not have any effects on the management of woodlands or forests.
PI	Livestock Grazing	The Proposed Action would provide reliable water sources in areas where it was lacking. Grazing use associated with the Proposed Action should better distributed livestock due to having access to other areas for grazing and should not cause any negative shifts in plant community composition.
NI	Floodplains, Hydrology, and Water Rights	None of the proposed RIPs are located within a floodplain. The private wells have well permits (permit 298927 – T3S R94W Sec 29 and permit 303465 – T3S R94W Sec 20). No impacts to hillslope hydrology are anticipated since no landslide or fragile soils are located within the disturbance area.
NI	Realty Authorizations	There are existing rights-of-way within the grazing allotment but no impacts are anticipated as a result of the Proposed Action.
NI	Recreation	The primary recreational activity that occurs in and around the area of the Proposed Action is big game hunting, mostly for elk and deer. This area is within Colorado Parks and Wildlife (CPW) Game Management Unit (GMU) 22. The public lands near the Proposed Action are difficult for the public to access and have no public motorized access. Because of the limited access to the project area, and the construction duration and time period, there is not expected to be any impacts to recreational opportunities or settings as a result of implementing the Proposed Action.
NI	Access and Transportation	The Proposed Action and other alternatives would not change the existing access to public lands in this area and or result in any noticeable change to the existing transportation system in this area. There may be short 50ft-200ft two-track type travel routes created from repeated motorized travel from the existing travel routes to the proposed stock tanks over time, but this would be considered a negligible change in access to public lands because there is no public motorized access to these travel routes.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.

Determination[1]	Resource	Rationale for Determination
Special Designations		
NI	Areas of Critical Environmental Concern	A portion of Project 2 is located within a portion of the Deer Gulch ACEC which is designated for sensitive plants and remnant vegetation associations. While a portion of the project would occur within the ACEC there are no remnant vegetation associations or sensitive plant populations located near the project which results in no impacts to the resources for which the ACEC was designated.
NP	Wilderness Study Areas, Wild and Scenic Rivers, or Scenic Byways	There are no Wilderness Study Areas, wild and scenic rivers, or scenic byways within the allotment.

[1] NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.
* Public Land Health Standard

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1. Monitoring and Evaluation

No long term trend sites/plots current exist on this allotment. With the proposed water facilities the BLM will develop long term trend monitoring sites as soon as possible after completion of the projects. The most recent allotment inspection was conducted on August 29, 2017 and was also part of the review of the proposed project with NRCS and the BLM wildlife biologist. During this inspection in association with hotter temperatures and drier conditions there was heavy utilization of forage noted in close proximity to reliable water sources (the new wells on private) and that the livestock were near the end of their grazing period on the allotment.

Each long term trend site will include a permanent, repeatable photo plot and a permanent, repeatable Daubenmire transect line to measure ground cover and frequency. Trend sites will be established in key areas to monitor livestock grazing use and vegetative conditions and the protocol developed in the Grazing Allotment Monitoring Plan for the White River Resource Area will be used. Future monitoring in grazing allotments will incorporate data from the field office wide Assessment Inventory and Monitoring (AIM) database that provides an overview of vegetation conditions. Trend sites are generally re-read every five to ten years.

Riparian assessments were conducted in 2012 for the Davis Creek and Deer Gulch within the allotment. This assessment showed only seasonal water in the drainages that did not support riparian communities and it was also noted that no livestock had been in or made use in the area for several grazing seasons.

4.2. Assumptions for Analysis

For purposes of the analysis in this EA, the BLM assumes that most livestock forage use would be concentrated around water sources and that most trails would be located along fence lines. Total acres of concentrated livestock use are estimated to be 437 acres for the existing water developments and an additional 2,000 acres for the proposed water projects (Table 2). However, not all of the catchments and spring locations are fully functional. The assumption, based on professional experience, is that the average disturbed area around a reliable water source (well, spring, trough, waterhole) occurs within about 0.25 miles around the water source and this equals about 125 acres per source. It is assumed the disturbed area around small or minor water sources (small waterholes or low producing springs) would be within 0.1 mile around the water source and equals about 25 acres. The BLM only included those existing water developments that were functional.

Table 1. Estimate of Areas of Existing and Proposed Concentrated Livestock Use

Pasture	Existing Water Developments	Estimated Existing Concentrated Use Areas (Acres)	Proposed Water Developments	Additional Areas for Concentrated Livestock Use (Acres)
14 Mile	Access to 14 Mile Creek on private	12	None	0
Hanahan	2 Partially functional catchments - 1 on private and 1 on public	50	2 tanks on private and 2 tanks on BLM	500
Davis Gulch	2 springs (different flows) - 1 on private and 1 on public	150	2 tanks on private and 2 tanks on BLM	500
Deer Gulch	3 springs located in close proximity to each other - 1 on private and 2 on public	200	1 tank on private and 3 tanks on BLM	500
Lower Davis	None	0	None	0
Coyote	3 partially functional catchments on public	50	2 tanks on BLM	250
Piceance	No functional water developments	0	2 tanks on BLM	250
	Total Acres	462		2,000

4.3. Livestock Grazing

4.3.1. Analysis Issues

How would additional water sources within the allotment affect livestock distribution and forage utilization?

4.3.2. Affected Environment

The allotment is situated in a mixture of range sites that are predominantly Brushy Loam, Mountain Loam, and Pinyon-Juniper Woodlands. The sagebrush and mountain shrub communities make up the majority of the communities on public lands in the Davis Gulch Allotment. The allotment primarily has an over story that consists of Gambel oak, serviceberry, snowberry, pinyon, juniper, and sagebrush, however in Deer and Davis Gulches there are conifer trees and aspen stands on the north facing slopes at higher elevations. Mixed within the understory of these vegetative communities are wheatgrasses, needle grasses, rice grass, bluegrass, and wildrye. These communities are currently within a productive state as a healthy mid- to late-seral class of vegetative condition.

Livestock use has been central to locations where reliable watering locations exist. Many of the functional catchments collect and retain precipitation runoff for a short period of time, are few in number and are scattered around the pastures at mid to higher elevations. These catchments rely entirely on snow and/or rainfall precipitation events but are still not considered a reliable water source.

4.3.3. Environmental Consequences – Proposed RIPs (Alt A)

The proposed waterline systems (Projects 1 – 3) have been placed in the various pastures and can be turned on or off to support the various management methods within the allotment. The Proposed Action would provide reliable water sources in areas where it was lacking thus increasing the utility and distribution of the livestock. Additional water sources have the potential for reducing area receiving heavier utilization that was previously centered on the minimum number of reliable water sources mainly located in valley bottoms. With the placement of such facilities along the ridge line and the addition proper placement of salt locations would come utilization of the forage base versus areas with heavy use and other areas with light or no use. The forage base assumes that cows/sheep use the entire allotment (except steep slopes). This type of water project would enhance livestock distribution away from the valley bottoms and reliable water sources generating diverse livestock distribution across the allotment (increase concentrated use/distribution across 2,000 acres or 42 percent of the allotment). The Animal Unit Months (AUMs) will not change from what is permitted in the allotment.

4.3.4. Environmental Consequences – No Action (Alt B)

Without the proposed waterline system (Projects 1 – 3) the livestock would have reduced reliable water sources to help with distribution across the pastures within the allotment. Livestock would continue to use the water sources until no longer available while much of the livestock would be

congregated around the reliable water sources. Without the proposed water projects the ability for the operator to distribute livestock, maintain a moderate utilization of vegetation across the allotment, and ease of pasture rotation management would be hindered by the limitation of the current water facilities. The ability to have livestock come out of valley bottoms for forage is primarily based on watering and salting locations and would be reduced if the project is not allowed (concentrated use estimated at 462 acres or 10 percent of the allotment). A pattern of heavier utilization would continue in areas where the current reliable water sources can be found and would risk not meeting land health standards and the potential for adjustments would possible need to be made.

4.4. Vegetation

4.4.1. Analysis Issues

How would additional reliable water sources affect forage and forage utilization within the allotment?

4.4.2. Affected Environment

The following lists is the predominant plant species that can be found on the allotment: mountain and nodding brome, slender wheatgrass, western wheatgrass, bluegrass, Indian ricegrass, basin wildrye, Letterman and Columbia needle grass, beardless bluebunch wheatgrass, mutton grass, elk sedge, sagebrush, oak brush, serviceberry, rabbitbrush, snowberry, mountain mahogany, pinyon, juniper, aspen, Douglas fir. Forb species, though important to the diversity of a community and comprising up to 25 to 30 percent of the composition of several of the plant communities, are not presented on the list because they are generally not substantial contributors to the general appearance of the community.

4.4.3. Environmental Consequences – Proposed RIPs (Alt A)

The addition of reliable water sources would result in livestock distribution into areas previously under-used due to lack of water sources. Utilization of the available forage in areas previously under-used would realize an increase while areas previously experiencing heavy utilization would realize a decrease in utilization based on water distribution. Enhanced distribution of livestock would reduce grazing pressure on forage species in areas surrounding the current reliable water resources including those located in the creek bottoms of Davis and Deer Gulches which only flow part of the year.

Overall impacts to vegetation (forage consumption) from the Proposed Action would increase livestock distribution that can spread forage utilization over a larger area and should aid in retention of the preferred plant community composition thus the utilization across the pastures/allotment could be overall a moderate utilization. All water development can be considered positive and necessary within allotments but the ability to control reliable water sources would enhance the permittees ability to regulate the livestock, the grazing rotation and the overall grazing utilization within each pasture of the allotment.

As noted in Table 2 above, the concentrated livestock use acres increases from the approximate 462 to 2,000 acres. This type of water project generates reliable water sources away from drainage bottoms aiding in the livestock's ability to seek out the forage base which again assumes that cows/sheep will use an entire allotment (except steep slopes). The overall anticipated result is that grazing use is spread further across the allotment and could maintain a moderate use level in the allotment.

For several reasons the proposed project is a benefit on the rangelands because the development of these water sources would result in minimal disturbances to vegetation from the construction of the facilities, the grazing rotation design of the seven pastures would enhance livestock distribution, and reduced concentrated use of vegetation within close proximity to the current facilities would be realized.

4.4.4. Environmental Consequences – No Action (Alt B)

Without the proposed water system project the reliable water sources would continue to be used as the main source of water support for the livestock grazing within the allotment. Enhanced livestock distribution within the pastures would not be realized. Utilization of available forage would remain unchanged for the most part. Depending on the annual precipitation cycle use in areas such as the valley bottoms would remain unchanged without the ability to draw livestock up and out of these areas.

Overall impacts to vegetation (forage consumption) from the No Action would mean no enhancement of livestock distribution over the pastures within the allotment. That select plant communities would be at risk of being altered if heavy livestock utilization continues on those locations. Lack of water development in any allotment or pasture reduces a livestock operator's ability to regulate the grazing rotation and overall grazing utilization.

4.5. Raptors and Migratory Birds

4.5.1. Analysis Issues

How would development of water source affect herbaceous ground cover as a source of forage and cover for migratory birds?

4.5.2. Affected Environment

The allotment is largely comprised of younger aged pinyon-juniper woodland and big sagebrush and mountain shrub communities. Spruce/fir and aspen stands occur mainly along the creeks in Davis and Deer Gulches. Dozens of migratory birds fulfill nesting functions in these communities throughout the migratory bird breeding season. In general, most birds return to the area in late-April and begin nesting in earnest by mid-May. Most young have fledged by mid- to late-July.

Mature components of pinyon-juniper and spruce-fir woodlands can provide suitable nesting substrate for several woodland raptors. The Proposed Action is not expected to have a substantial influence on raptor nesting activities as there is limited nesting substrate within this allotment.

4.5.3. Environmental Consequences – Proposed RIPs (Alt A)

Installation of these new water sources would be expected to improve livestock distribution and alleviate grazing-related impacts at existing water sources. Direct habitat loss associated with pipeline installation would be nominal as these routes are all located in existing roadbeds. Indirectly, noise and activity associated with pipeline and stock tank installation would be expected to disrupt or displace birds within the vicinity (up to 100 meters) of these sites. Impacts would be short-term (during construction/installation) and if done outside of the migratory bird nesting period would have no influence on nesting activities (see Design Feature #6). Reductions in herbaceous vegetation, as a source of cover and forage would be expected in the vicinity of the proposed water sources. Strong reductions in vegetation would be expected in the area immediately around the tanks (up to 164 feet). Moderate reductions in herbaceous ground cover would likely extend out to 656 feet, influencing roughly 325 acres of functional nesting habitat. These impacts would be most noticeable in the Hanahan, Piceance and Coyote pastures where livestock use (6/1 – 6/30) is coincident with the migratory bird nesting season in alternating years. This may result in a minor reduction in nest densities but would not be expected to have a substantial influence on migratory birds at the local or population level.

Option 1 would provide the greatest benefit to migratory birds and vegetation communities that support nesting functions as it would be expected to draw livestock out of the narrow valley bottoms and retain and extend use along the ridgelines. In general, livestock tend to make heavier use of valley bottoms and toe slopes. Providing a consistent water source in the draw (which would be expected from Option 2) would likely exacerbate existing impacts (extend and concentrate use), particularly since this pasture is used three out of four years during the growing season. This could lead to deleterious shifts in understory composition (prevalence of undesirable species) over time.

4.5.4. Environmental Consequences – No Action (Alt B)

There would be no anticipated change in livestock distribution. Additional impacts to vegetation (reduction in herbaceous understory) associated with the proposed water developments would not occur.

4.6. Cumulative Impacts Analysis

4.6.1. Analysis Areas

The geographic extent of cumulative impacts is 4,738 acres of public land and 1,193 acres of private land within the Davis Creek allotment. The timeframes, or temporal boundaries, for those impacts would be the life of the projects.

4.6.2. Past, Present, and Reasonably Foreseeable Future Actions

Cumulative effects are defined in the CEQ regulations (40 CFR 1508.7) as "...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."

Existing Range Improvements

Other range improvements within the Davis Creek allotment are shown on Map 5. The estimated acreage of concentrated livestock use associated with the existing and new water developments is 2,462 acres (Table 2).

Oil and Gas Development

The nearest producing oil and gas well is approximately 1.3 miles northwest of the closest proposed range improvement project. In 2015 the BLM published the Oil and Gas Development Proposed RMP Amendment/Final EIS which considered changes in the location, type, and level of oil and gas development within the resource area. This allotment is located outside of the Mesaverde Play Area (MPA) and the BLM assumed that only 5 percent of future oil and gas development would occur outside of the MPA and that it would be primarily limited to single-well pads.

Other Actions

Other past, present, and reasonably foreseeable actions in the project area include vegetation treatments on private land in the allotment. Recreation use is characterized by OHV use and hunting but public access is restricted due to the arrangement of private lands within the allotment.

Climate Change

The 2015 Oil and Gas Development Proposed RMPA/Final EIS (page 4-629) summarized some of the potential climate changes that could be expected in the region, including:

- Temperatures are expected to increase more in winter than in summer, more at night than during the day, and more in the mountains than at lower elevations.
- The annual number of days above 90°F and the frequency of extreme heat events could increase.
- Annual average precipitation increased between 5 and 15 percent between 1958 and 2008. Based on modeling using a high emissions scenario, predicted precipitation changes indicate increased precipitation in the winter (up to +15 percent) and substantial decreases in the spring (from -5 percent to -20 percent) and summer (-5 percent to -15 percent). Fall precipitation is predicted to be within -5 percent to +5 percent.
- End-of-summer drought increased during the last 50 years, and drought is expected to be more prevalent in the future.
- More frequent, more severe, and longer-lasting droughts are occurring and are expected to become more prevalent.
- Annual runoff could decrease by 10 to 20 percent by 2041 to 2060, compared to 1901 to 1970.
- Snowfall is predicted to decline in and near the Planning Area.
- Land could have increased susceptibility to fire with more frequent, larger, and more intense fires.

4.6.3. Cumulative Impacts by Resource

Livestock Grazing

Livestock grazing for this allotment will continue to be administered by BLM. For the most part the permittee has transitioned from grazing sheep to grazing cattle and BLM does not see that trend changing in the near future. Livestock grazing during the authorized use period will continue and is not expected to change. Oil and gas development is not expected to change in the area except where currently concentrated several miles to the west of the allotment.

Vegetation

Livestock grazing during the authorized use period will continue to remove forage from the allotment in varying amounts in various locations based primarily upon watering and salting locations and is not expected to change.

Raptors and Migratory Birds

In addition to livestock grazing, there are few other management actions within or in the vicinity of the allotment that may influence migratory birds or vegetation communities that support their nesting functions (limited to recreational activities and some scattered oil and gas development). The Proposed Action would be expected to improve livestock distribution across the allotment. Development of the proposed water sources would result in moderate to strong reductions in herbaceous ground cover as a source of forage and cover. It may reduce nest densities but would not be expected to have an influence at the population level.

5. SUPPORTING INFORMATION

5.1. Interdisciplinary Review

Table 2. List of Preparers

Name	Title	Area of Responsibility	Date Signed
Keith Sauter	Hydrologist	Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Prime and Unique Farmlands	11/29/2017
Lisa Belmonte	Wildlife Biologist	Special Status Animal Species, Migratory Birds, and Aquatic and Terrestrial Wildlife	11/30/2017
Melissa J. Kindall	Rangeland Technician/Project Lead	Vegetation, Invasive, Non-Native Species, Wild Horses, Livestock Grazing, Soil Resources, Wetlands and Riparian Zones, Hazardous or Solid Wastes, Social and Economic Conditions	12/01/2017
Matthew Dupire	Ecologist	Special Status Plant Species, Forestry and Woodland Products, Areas of Critical Environmental Concern	11/28/2017

Name	Title	Area of Responsibility	Date Signed
Sarah MacDonald	Archaeologist	Cultural Resources, Paleontological Resources, Native American Religious Concerns	12/6/2017
Aaron Grimes	Outdoor Recreation Planner	Visual Resources, Lands with Wilderness Characteristics, Recreation, Access and Transportation, Wilderness, Scenic Byways	11/30/2017
Paul Daggett	Mining Engineer	Air Quality; Geology and Minerals	11/15/2017
Bob Klages	Fire Management Specialist	Fire Management Specialist	11/15/2017
Janet Doll	Realty Specialist	Realty Authorizations	11/15/2017
Heather Sauls	Planning & Environmental Coordinator	NEPA Compliance	1/7/2018

5.2. Tribes, Individuals, Organizations, or Agencies Consulted

Tribal consultation letters were mailed and emailed to representatives of the Ute Indian Tribe of the Uintah and Ouray Reservation, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, and the Eastern Shoshone Tribe on December 6, 2017. If additional information comes out in consultation, aspects of the project may be changed in response to tribal concerns.

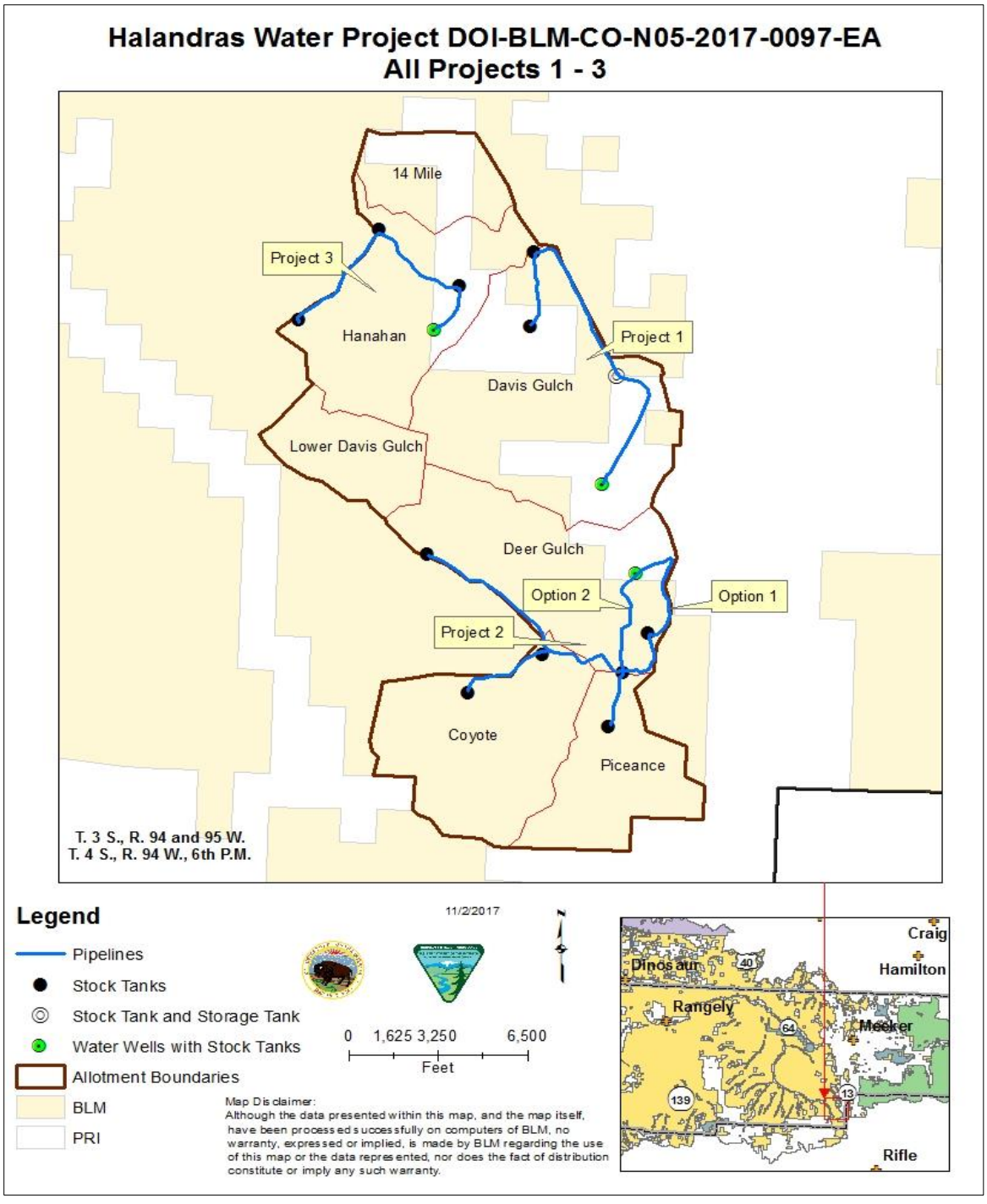
The final cultural resource inventory report and supporting documentation for cultural resources were sent to the State Historic Preservation Officer (SHPO) on December 6, 2017.

5.3. References

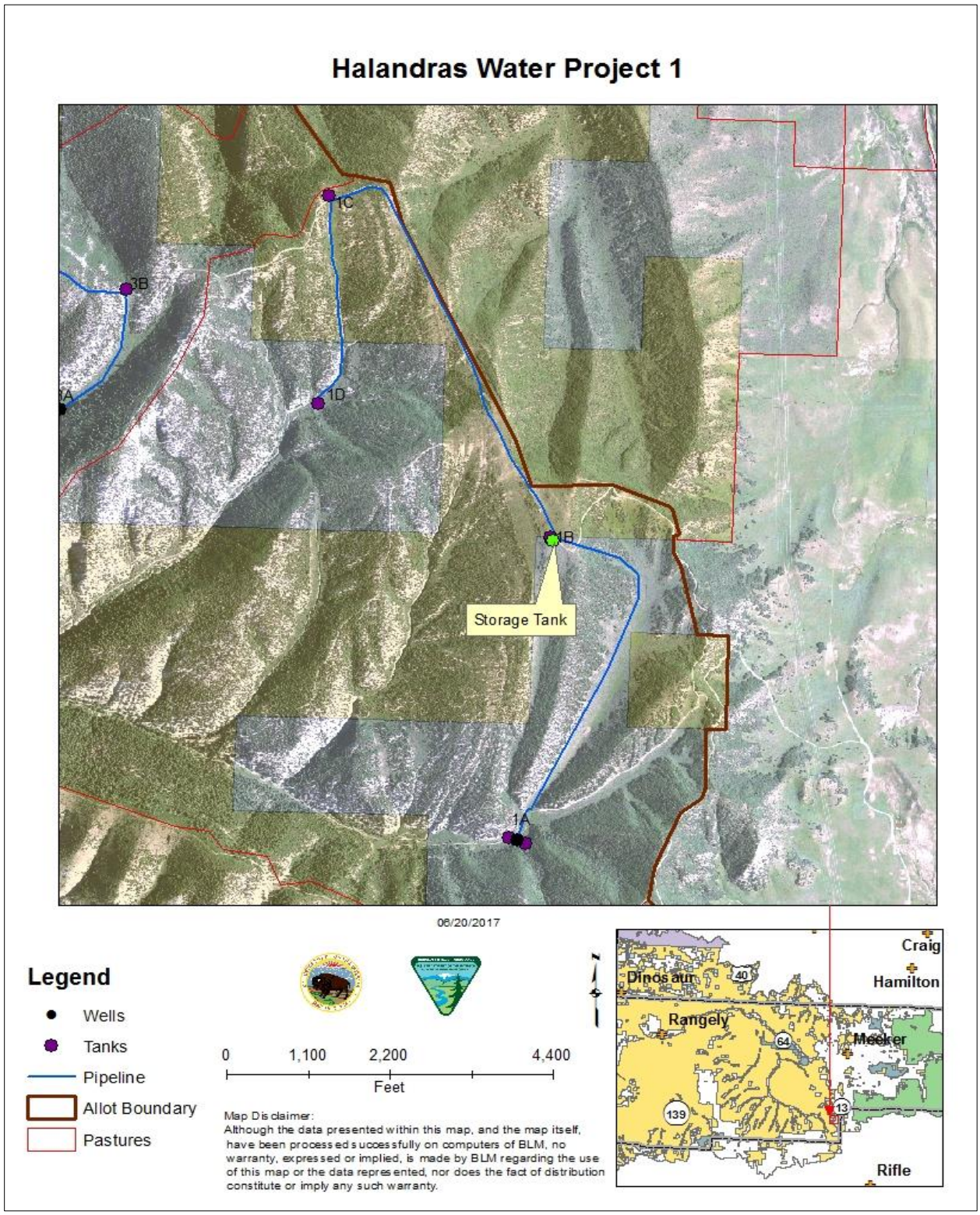
Bureau of Land Management. 2008. Programmatic Biological Assessment for BLM Actions in Western Colorado: Water Depletion and Effects on the Four Endangered Big River Fishes: Colorado Pikeminnow (*Ptychocheilus Lucius*), humpback chub (*Gila cypha*), bonytail chub (*Gila elegans*), and razorback sucker (*Xyrauchen texanus*).

APPENDIX A. MAPS

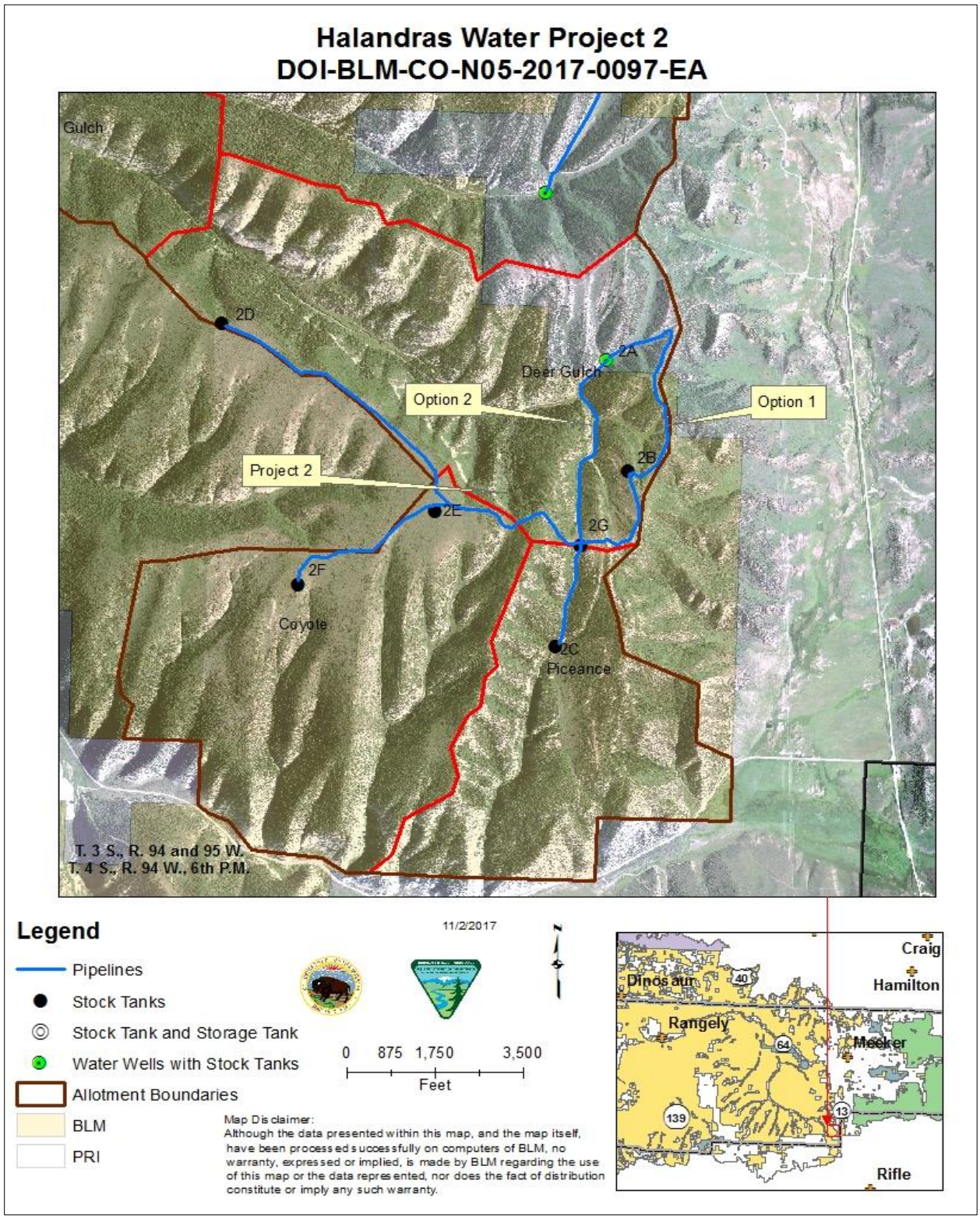
Map 1. Halandras Water Projects – Overview Map of All Three Projects



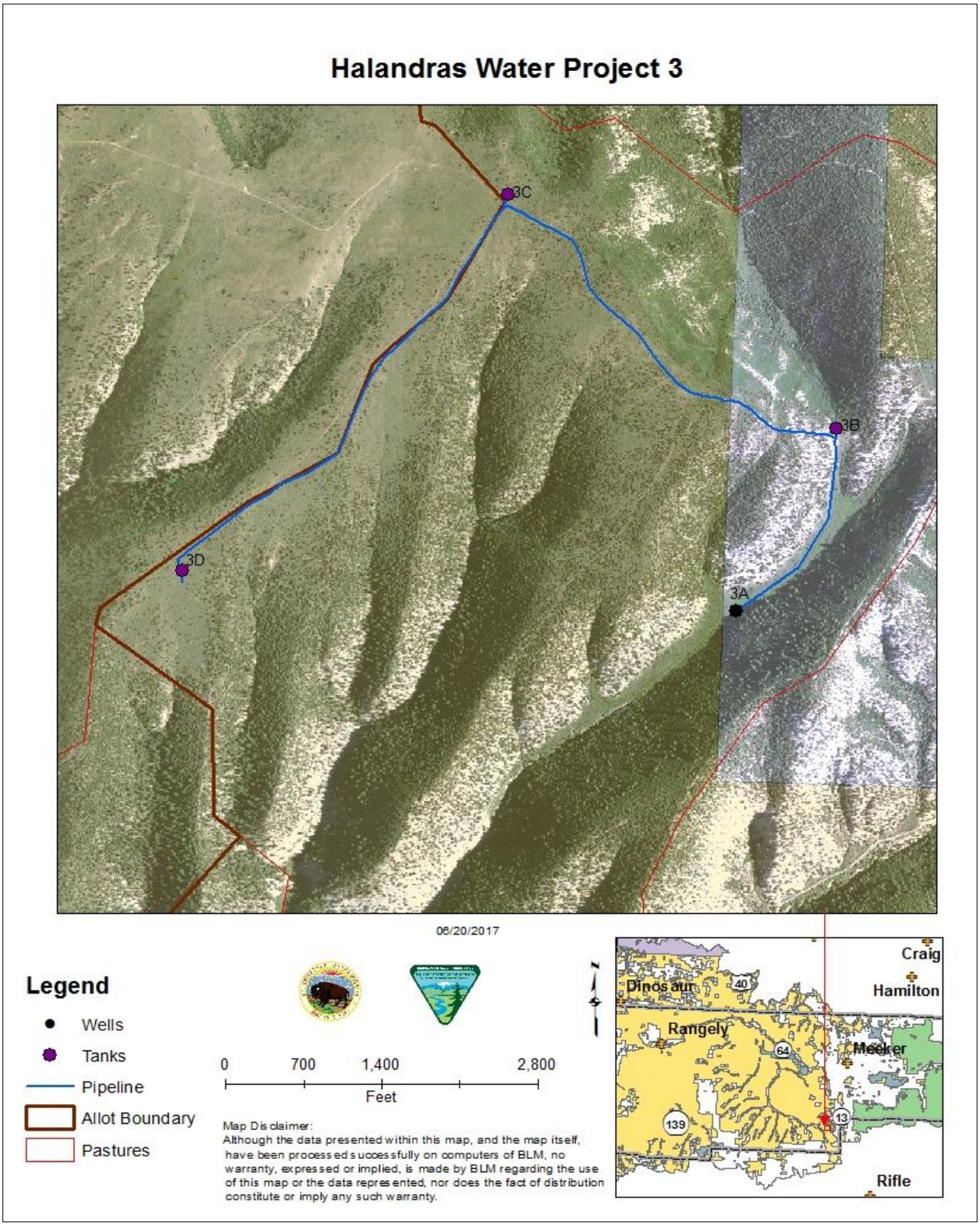
Map 2. Project 1 – Detailed Map



Map 3. Project 2 – Detailed Map



Map 4. Project 3 – Detailed Map



Map 5. Existing Catchment and Spring Locations